

PATENT ABSTRACTS OF JAPAN

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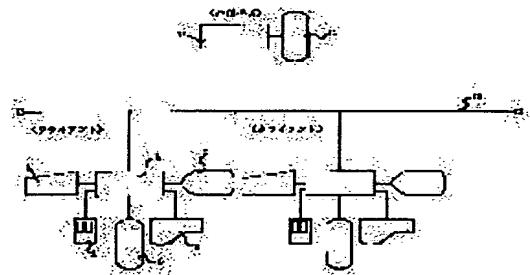
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(54) TRAVEL PLAN SYSTEM TAKING RESOLUTION OF JETLAG INTO CONSIDERATION

(57)Abstract:

PROBLEM TO BE SOLVED: To make a travel plan that takes resolution of jetlag into consideration in the travel plan system for airplanes crossing time zones.

SOLUTION: By a keyboard 1 and a mouse 2, a departure, a destination and the flight of an airline, etc., are registered in a travel temporary storage area, the rest time required for resolution of jetlag for the flight is calculated and the time is displayed on a CRT 3. The departure time to the next destination is inputted from the keyboard 1 and plural of the flights on pertinent time or after are displayed on the CRT 3. The difference of the arrival time of the flight and the departure time of each flight to be departed at pertinent time or after is calculated and the difference is displayed on a CRT screen. From the displayed CRT screen, the flight which taking resolution of jetlag into consideration is selected by the mouse and the flight is registered in the travel plan temporary storage area. This procedure is repeated to each flight. A travel plan is registered in the travel plan temporary storage area. In plural travel plans, the order number or the like which takes resolution of jetting into consideration is displayed on the CRT screen and the most favorable plan is selected from the screen.



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CLAIMS

[Claim(s)]

[Claim 1] A means to input an origin, the destination, departure time, etc. and to choose the flight of an airline etc. in the travel plan system of the airplane over a time zone region, Calculation / display means of the need rest time amount for canceling a jet lag about this flight, A means to choose the flight which inputted the next destination going departure time, computed the difference of the arrival time of the flight of two or more affairs, or the flight of said means, and each departure time of the flight of these two or more affairs, displayed on the screen, and took the jet lag into consideration, The travel plan system of the airplane in consideration of the jet lag dissolution characterized by having the means which repeats said each means between each flight.

[Claim 2] The travel plan system of the airplane in consideration of the jet lag dissolution characterized by having a means to register the travel plan system of two or more proposals of the airplane over the time zone region of the preceding clause, a means to display on a screen the ranking number as which the jet lag dissolution was considered with the last means, and a means to output the travel plan chosen with said means.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]**[0001]**

[Field of the Invention] This invention relates to information offer of a travel plan in the recommendation industry of the travel plan by the airplane of an overseas.

[0002]

[Description of the Prior Art] The conventional system formed the travel plan based on the origin of the airplane of each airline, the destination ground, the junction ground, departure time, the arrival time, costs, etc., and had recommended the travel plan to the customer.

[0003]

[Problem(s) to be Solved by the Invention] With the above-mentioned conventional technique, the travel plan in consideration of a jet lag could not be formed, but it slept by the jet lag at the actual travel place, and the technical problem that a wonderful scene will be overlooked occurred. The purpose of this invention is to solve this technical problem.

[0004]

[Means for Solving the Problem] What is necessary is just to perform it as follows, in order to attain the above-mentioned purpose. That is, use the need rest hour meter formula of a jet lag dissolution of the time amount which registers the flight over a time zone region and a jet lag dissolution takes based on the arrival time of this flight that carried out the preceding paragraph input of the international airline of ICAO, and it computes and displays. The difference of the arrival time of the departure time of two or more affairs of the next destination going, a flight, and said flight and the departure time of each flight concerned is computed, it displays on a screen, and the ETD with which the need [of canceling a jet lag] rest time amount is not filled chooses the flight in consideration of a jet lag dissolution by carrying out an alarm display. This is repeated between each flight. Moreover, the above-mentioned technical problem is solvable by adding the ratio which broke the time amount of the difference between the flights of arrival and a start by jet lag dissolution need time amount, dividing by the number of between flights, and displaying, choosing and outputting by the ranking number from a travel plan with the highest ratio to the last travel plan by the travel plan system of the airplane over each time zone region.

[0005] According to this invention, the 1st means of claim 1 serves to register the flight of an origin, the destination, and an airline etc. The 2nd means of claim 1 serves to use the need rest hour meter formula of a jet lag dissolution of rest time amount of the international airline of ICAO, and to compute and display, in order to cancel a jet lag about each flight. The 3rd means of claim 1 the same item as the 1st means of claim 1 about the flight of the next destination going The departure time of two or more affairs, The difference between the arrival time of a flight and the aforementioned flight and the departure time of each of this flight is computed, and it displays on a screen. When there is less spacing time amount of the arrival time and departure time than need jet lag dissolution time amount An alarm display is carried out, it serves to make the flight in consideration of a jet lag choose it as, and the 4th means of claim 1 serves to repeat this between each flight.

[0006] The 1st means of claim 2 serves to register two or more travel plans of an affair by performing each means of claim 1, and the 2nd means of claim 2 serves to display on a screen

the ranking number as which the jet lag was considered by each travel plan (path) of every. The 3rd means of claim 2 serves to choose and output the travel plan in consideration of a jet lag from a last means. Since the travel plan which took the jet lag into consideration by this is made, the technical problem of the above-mentioned conventional technique is solvable.

[0007]

[Embodiment of the Invention] Drawing 1 is a block block diagram which realizes the travel plan system in consideration of the jet lag dissolution of this example.

[0008] As a terminal of the client side of this system As a display which displays a keyboard 1, and a mouse 2 and data as an input device As ** CRT 3 and a control device, as a central processing unit (CPU) 4 and storage which memorizes data As ***** 5 and an output unit, a printer 6 and file server side consists of local area networks (LAN) 15 as magnetic disk memory 14 and transmission equipment as a central processing unit (CPU) 13 and a store as a control device. In addition, when it has a file by the side of a file server in a client side, the central processing unit 13, the magnetic disk memory 14, and the transmission equipment local area network (LAN) 15 of a file server are unnecessary. CRT may be a liquid crystal display (LCD).

[0009] Drawing 2, drawing 3, and drawing 4 are processing flow charts which process whole this invention. Drawing 5 and drawing 6 are the examples of the display screen when applying this invention. Drawing 5 expresses a flight master file. The flight NO of this master file is the major key section, and is located in a line in order of the fossete size of a major key. Departure time, an origin code, a course ground code, and a destination code are the secondary key sections, are too located in a line with fossete size, and can be respectively searched as an independent key. Drawing 8 expresses an origin (course ground, destination) master file. Drawing 9 is a time-of-day multiplier table, and the key section is the section of end time from start time. Drawing 10 expresses travel plan temporary storage area. Drawing 11 expresses a reservation status file. The key section consists of a date and a flight NO. Drawing 12 is a count routine using the criteria rest time amount (R) formula which cancels the jet lag for international airlines of ICAO. In this, it has a flight master file (drawing 7), an origin master file (drawing 8), and a reservation status file (drawing 11) in a file server side. When there is no file server, or when processing only by the client side, you may have this file in a client side.

[0010] Here, along with drawing 2, drawing 3, and the processing flow chart of drawing 4, it explains based on the example which forms the travel plan "which goes to Paris via Seattle London from Nagoya, and returns from Paris to Nagoya via Anchorage." First, I have a travel plan proposal submitted from a customer, and an operator starts the travel plan system application program (TRIP-AP) of a central processing unit 4 based on it. (TRIP-AP) sets "1" to Z counter (S01). "1" is set to X counter (S02), and a travel plan screen (drawing 5) is displayed (S03). An operator clicks the directions part of an origin, displays a pop up menu (S04), and clicks an applicable origin (S05). (selection and input) It processes like [grade / the destination and] an origin. And an operator inputs a start day and the ETD (S06). Based on [file / (drawing 11) / reservation status] this input, (TRIP-AP) searches the flight after this ETD (b) from a flight master file (drawing 7) (S07), it uses a date and Flight NO (b) as a key, searches reservation status (S08), and displays it on the lower berth of a travel plan screen (drawing 5) (S09). 2nd henceforth searches the thing after Flight NO (b) with the ETD from a flight master (drawing 7). When the date changes, a wrap around is carried out and it searches. When the display number of cases becomes the set point or there are no data, it goes to (S11). When that is not right, it goes to put the b counter +1 into b counter (S07). An operator clicks an applicable flight (X) (S11). (selection and input) (TRIP-AP) uses a date and Flight NO as a key based on the clicked contents, updates a reservation status file (drawing 11) (S12), and sets this flight master information and this reservation information to travel plan temporary storage area (drawing 10) (S13). Applicable flight (X) A flight master (drawing 7) is searched based on NO, the duration of this master is extracted, and a parameter is set to T (time of flight) of the count routine of drawing 12. The origin code of this flight (X) is set to the key item of the origin master file of drawing 8, and is searched, and LONG is extracted. It carries out like [code / (or course ground code) / destination] an origin code. Based on this origin LONG and this

destination LONG, (origin LONG-destination LONG) / 15 are computed, and it sets to Z (number of time zones) parameter of the count routine of drawing 12. The applicable key item of the time series multiplier table of drawing 9 is looked for from the departure time of the travel plan temporary storage area (drawing 10) of the applicable selected flight (X), and it refers to an applicable key item. The departure time multiplier of this time series multiplier table is set to Cd parameter (multiplier of the time of day of an origin) of the count routine of drawing 12. The applicable key item of the time series multiplier table of drawing 9 is similarly looked for based on this arrival time of the travel plan temporary storage area (drawing 10) of this flight (X), and it refers to an applicable key item. And an arrival time multiplier is extracted and it sets to calcium parameter (multiplier of the time of day of an arrival value) of the count routine of drawing 12. The count routine of drawing 12 is performed based on it, and the need [of canceling a jet lag] rest time amount (R) is computed and displayed (S15). (S14) The information on need rest time amount (R) is set to the travel plan temporary storage area of (drawing 10) (S16). An operator (operator) clicks the directions part of the origin of the following flight (X+1), displays a pop up menu (S17), and clicks and inputs an applicable origin (S18). It processes like [grade / the destination and] an origin. The date and ETD of a flight (X+1) are inputted (S19). The flight NO after this ETD (a) is searched from a flight master (drawing 7) based on this ETD (S20), a reservation status file is carried out at a key, a date and this flight NO (a) are searched, and reservation status is extracted (S21). 2nd henceforth searches the thing after Flight NO (a) with this ETD from a flight master (drawing 7). When the date changes, a wrap around is carried out and it searches. The time of arrival (the date is also included) of a flight (X) is deducted from the start time amount (the date is also included) of this flight NO (a), and the time amount between flights (Y) is computed (S22). A destination [degree] going flight (a), its departure time, the time amount between flights (Y), etc. are displayed on a screen (S23). a destination [degree] line flight is the same as the set point — it judges whether it was shown the ** table or there are not any data (S24). When that is not right, (NO) returns to setting the a counter +1 to a counter (S20) (S25). If it becomes so (YES), an operator will click the flight (X+1) in consideration of a jet lag (S26). (selection and input) (TRIP-AP) outputs the inputted information to travel plan temporary storage area (drawing 10), and displays the ETD of the selected flight (X+1), Flight NO, a unit price, etc. on the input row of this ETD of the upper case of a travel plan screen (drawing 5) (S27). Simultaneously, a date and Flight NO (X+1) are used as a key, a reservation status file (drawing 11) is updated (S28), and reservation information is set to travel plan temporary storage area (S29). And the X counter +1 is set to X counter (S30). It displays whether all the flights of one travel plan were ended on a travel plan screen (drawing 5) (S31). When having not ended, it returns to (S13) by the click of the "degree flight" of an operator. When having ended, all travel plans were completed by an operator's "1 *****" click, or an operator's response is calculated (S32). However, if an operator clicks not "1 *****" but "travel plan termination" (S34), it will go. When it is not the response of completion, (TRIP-AP) gives the Z counter +1 to Z counter (S33), and returns to (S02).

[0011] When there is a click of "all travel plan completion" from an operator, about all the travel plans registered until now, it extracts from travel plan temporary storage area (drawing 10), the ratio which broke the time amount of the difference between the flights of the arrival time and departure time by the need [of canceling a jet lag] rest time amount is added, the sum total is divided by the number of between flights, and a screen display of the ranking number etc. is given and carried out from a travel plan with the highest ratio (drawing 6). Moreover, each travel plan of drawing 6 displays the name of a place by the round mark and the line with reference to an origin master file for "it going to Paris via Seattle London from Nagoya, and returning from Paris to Nagoya via Anchorage" based on each code of a bond, an origin, the course ground, and the destination. Each travel plan is identified by the color (S34). An operator clicks the directions part currently attached to the ranking number of a travel plan (S35). (selection and input) (TRIP-AP) outputs the ticket of the selected travel plan to a printer 3 (S36). The method which displays select-code information on the contents correspondence of an item, and inputs and chooses the corresponding code as it is sufficient as (S04), (S05), (S17), and (S18). When a ticket does not actually need to be made only from drawing up a travel plan,

(S08), (S12), (S21), (S28), and (S36) are unnecessary.

[0012]

[Effect of the Invention] Since the travel plan in consideration of a jet lag dissolution can be formed according to this invention, it sleeps by the jet lag at the travel place of a real festival, and overlooking a wonderful scene has the lost effectiveness.

[Translation done.]

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TECHNICAL FIELD

[Field of the Invention] This invention relates to information offer of a travel plan in the recommendation industry of the travel plan by the airplane of an overseas.

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PRIOR ART

[Description of the Prior Art] The conventional system formed the travel plan based on the origin of the airplane of each airline, the destination ground, the junction ground, departure time, the arrival time, costs, etc., and had recommended the travel plan to the customer.

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EFFECT OF THE INVENTION

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] With the above-mentioned conventional technique, the travel plan in consideration of a jet lag could not be formed, but it slept by the jet lag at the actual travel place, and the technical problem that a wonderful scene will be overlooked occurred. The purpose of this invention is to solve this technical problem.

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MEANS

[Means for Solving the Problem] What is necessary is just to perform it as follows, in order to attain the above-mentioned purpose. That is, use the need rest hour meter formula of a jet lag dissolution of the time amount which registers the flight over a time zone region and a jet lag dissolution takes based on the arrival time of this flight that carried out the preceding paragraph input of the international airline of ICAO, and it computes and displays. The difference of the arrival time of the departure time of two or more affairs of the next destination going, a flight, and said flight and the departure time of each flight concerned is computed, it displays on a screen, and the ETD with which the need [of canceling a jet lag] rest time amount is not filled chooses the flight in consideration of a jet lag dissolution by carrying out an alarm display. This is repeated between each flight. Moreover, the above-mentioned technical problem is solvable by adding the ratio which broke the time amount of the difference between the flights of arrival and a start by jet lag dissolution need time amount, dividing by the number of between flights, and displaying, choosing and outputting by the ranking number from a travel plan with the highest ratio to the last travel plan by the travel plan system of the airplane over each time zone region.

[0005] According to this invention, the 1st means of claim 1 serves to register the flight of an origin, the destination, and an airline etc. The 2nd means of claim 1 serves to use the need rest hour meter formula of a jet lag dissolution of rest time amount of the international airline of ICAO, and to compute and display, in order to cancel a jet lag about each flight. The 3rd means of claim 1 the same item as the 1st means of claim 1 about the flight of the next destination going The departure time of two or more affairs, The difference between the arrival time of a flight and the aforementioned flight and the departure time of each of this flight is computed, and it displays on a screen. When there is less spacing time amount of the arrival time and departure time than need jet lag dissolution time amount An alarm display is carried out, it serves to make the flight in consideration of a jet lag choose it as, and the 4th means of claim 1 serves to repeat this between each flight.

[0006] The 1st means of claim 2 serves to register two or more travel plans of an affair by performing each means of claim 1, and the 2nd means of claim 2 serves to display on a screen the ranking number as which the jet lag was considered by each travel plan (path) of every. The 3rd means of claim 2 serves to choose and output the travel plan in consideration of a jet lag from a last means. Since the travel plan which took the jet lag into consideration by this is made, the technical problem of the above-mentioned conventional technique is solvable.

[0007]

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equipment local area network (LAN) 15 of a file server are unnecessary. CRT may be a liquid crystal display (LCD).

[0009] Drawing 2 , drawing 3 , and drawing 4 are processing flow charts which process whole this invention. Drawing 5 and drawing 6 are the examples of the display screen when applying this invention. Drawing 5 expresses a flight master file. The flight NO of this master file is the major key section, and is located in a line in order of the fossete size of a major key. Departure time, an origin code, a course ground code, and a destination code are the secondary key sections, are too located in a line with fossete size, and can be respectively searched as an independent key. Drawing 8 expresses an origin (course ground, destination) master file. Drawing 9 is a time-of-day multiplier table, and the key section is the section of end time from start time. Drawing 10 expresses travel plan temporary storage area. Drawing 11 expresses a reservation status file. The key section consists of a date and a flight NO. Drawing 12 is a count routine using the criteria rest time amount (R) formula which cancels the jet lag for international airlines of ICAO. In this, it has a flight master file (drawing 7), an origin master file (drawing 8), and a reservation status file (drawing 11) in a file server side. When there is no file server, or when processing only by the client side, you may have this file in a client side.

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menu (S17), and clicks and inputs an applicable origin (S18). It processes like [grade / the destination and] an origin. The date and ETD of a flight (X+1) are inputted (S19). The flight NO after this ETD (a) is searched from a flight master (drawing 7) based on this ETD (S20), a reservation status file is carried out at a key, a date and this flight NO (a) are searched, and reservation status is extracted (S21). 2nd henceforth searches the thing after Flight NO (a) with this ETD from a flight master (drawing 7). When the date changes, a wrap around is carried out and it searches. The time of arrival (the date is also included) of a flight (X) is deducted from the start time amount (the date is also included) of this flight NO (a), and the time amount between flights (Y) is computed (S22). A destination [degree] going flight (a), its departure time, the time amount between flights (Y), etc. are displayed on a screen (S23). a destination [degree] line flight is the same as the set point — it judges whether it was shown the ** table or there are not any data (S24). When that is not right, (NO) returns to setting the a counter +1 to a counter (S20) (S25). If it becomes so (YES), an operator will click the flight (X+1) in consideration of a jet lag (S26). (selection and input) (TRIP-AP) outputs the inputted information to travel plan temporary storage area (drawing 10), and displays the ETD of the selected flight (X+1), Flight NO, a unit price, etc. on the input row of this ETD of the upper case of a travel plan screen (drawing 5) (S27). Simultaneously, a date and Flight NO (X+1) are used as a key, a reservation status file (drawing 11) is updated (S28), and reservation information is set to travel plan temporary storage area (S29). And the X counter +1 is set to X counter (S30). It displays whether all the flights of one travel plan were ended on a travel plan screen (drawing 5) (S31). When having not ended, it returns to (S13) by the click of the "degree flight" of an operator. When having ended, all travel plans were completed by an operator's "1 *****" click, or an operator's response is calculated (S32). However, if an operator clicks not "1 *****" but "travel plan termination" (S34), it will go. When it is not the response of completion, (TRIP-AP) gives the Z counter +1 to Z counter (S33), and returns to (S02).

[0011] When there is a click of "all travel plan completion" from an operator, about all the travel plans registered until now, it extracts from travel plan temporary storage area (drawing 10), the ratio which broke the time amount of the difference between the flights of the arrival time and departure time by the need [of canceling a jet lag] rest time amount is added, the sum total is divided by the number of between flights, and a screen display of the ranking number etc. is given and carried out from a travel plan with the highest ratio (drawing 6). Moreover, each travel plan of drawing 6 displays the name of a place by the round mark and the line with reference to an origin master file for "it going to Paris via Seattle London from Nagoya, and returning from Paris to Nagoya via Anchorage" based on each code of a bond, an origin, the course ground, and the destination. Each travel plan is identified by the color (S34). An operator clicks the directions part currently attached to the ranking number of a travel plan (S35). (selection and input) (TRIP-AP) outputs the ticket of the selected travel plan to a printer 3 (S36). The method which displays select-code information on the contents correspondence of an item, and inputs and chooses the corresponding code as it is sufficient as (S04), (S05), (S17), and (S18). When a ticket does not actually need to be made only from drawing up a travel plan, (S08), (S12), (S21), (S28), and (S36) are unnecessary.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block block diagram which realizes the travel plan system in consideration of the jet lag dissolution of this example.

[Drawing 2] It is the processing flow chart which processes whole this invention.

[Drawing 3] It is the flow chart of a continuation of **drawing 2**.

[Drawing 4] It is the flow chart of a continuation of **drawing 3**.

[Drawing 5] It is an example of a travel plan screen when applying this invention.

[Drawing 6] It is an example of a travel plan screen in consideration of the time difference when applying this invention.

[Drawing 7] A flight master file is expressed. The flight NO of this master file is the major key section, and is located in a line in order of the fossette size of a major key. Departure time (the date is included), an origin code, a course ground code, and a destination code are the secondary key sections, are too located in a line with fossette size, and can be respectively searched as an independent key.

[Drawing 8] An origin (course ground, destination) master file is expressed.

[Drawing 9] It is a time-of-day multiplier table, and the key section is the section of end time from start time.

[Drawing 10] Travel plan temporary storage area is expressed.

[Drawing 11] A reservation status file is expressed. The key section consists of a date and a flight NO.

[Drawing 12] It is a count routine using the criteria rest time amount (R) formula which cancels the jet lag for international airlines of ICAO.

[Description of Notations]

1 -- Keyboard of a client side 2 [-- The central processing unit (CPU) of a client side, 5 / -- Magnetic disk memory of a client side / 6 / -- The magnetic disk memory by the side of a file server, 15 / -- Local area network (LAN). / -- The printer of a client side 13 -- The central processing unit (CPU) by the side of a file server, 14] -- The mouse of a client side, 3 -- CRT 3 (or liquid crystal display (LCD)) and 4 of a client side

[Translation done.]

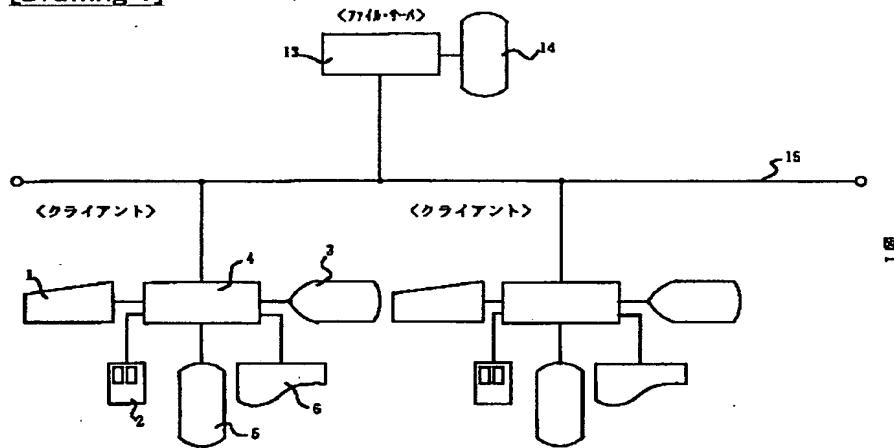
* NOTICES *

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DRAWINGS

[Drawing 1]



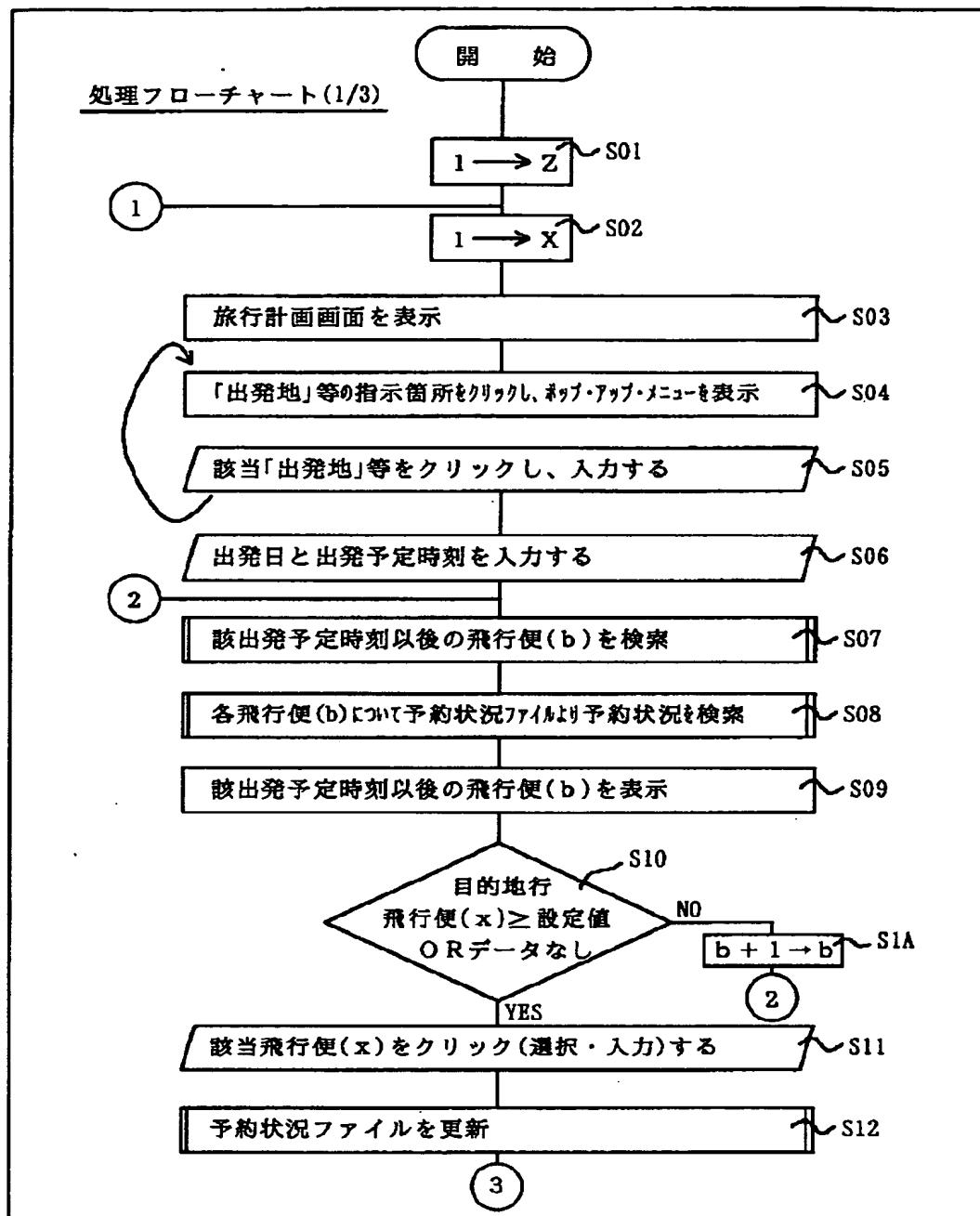
[Drawing 8]

図8

キー項目 出発地コード (目的地コード) (経由地コード)
属性項目 出発地名 (目的地名) (経由地名) 種別

[Drawing 2]

図 2

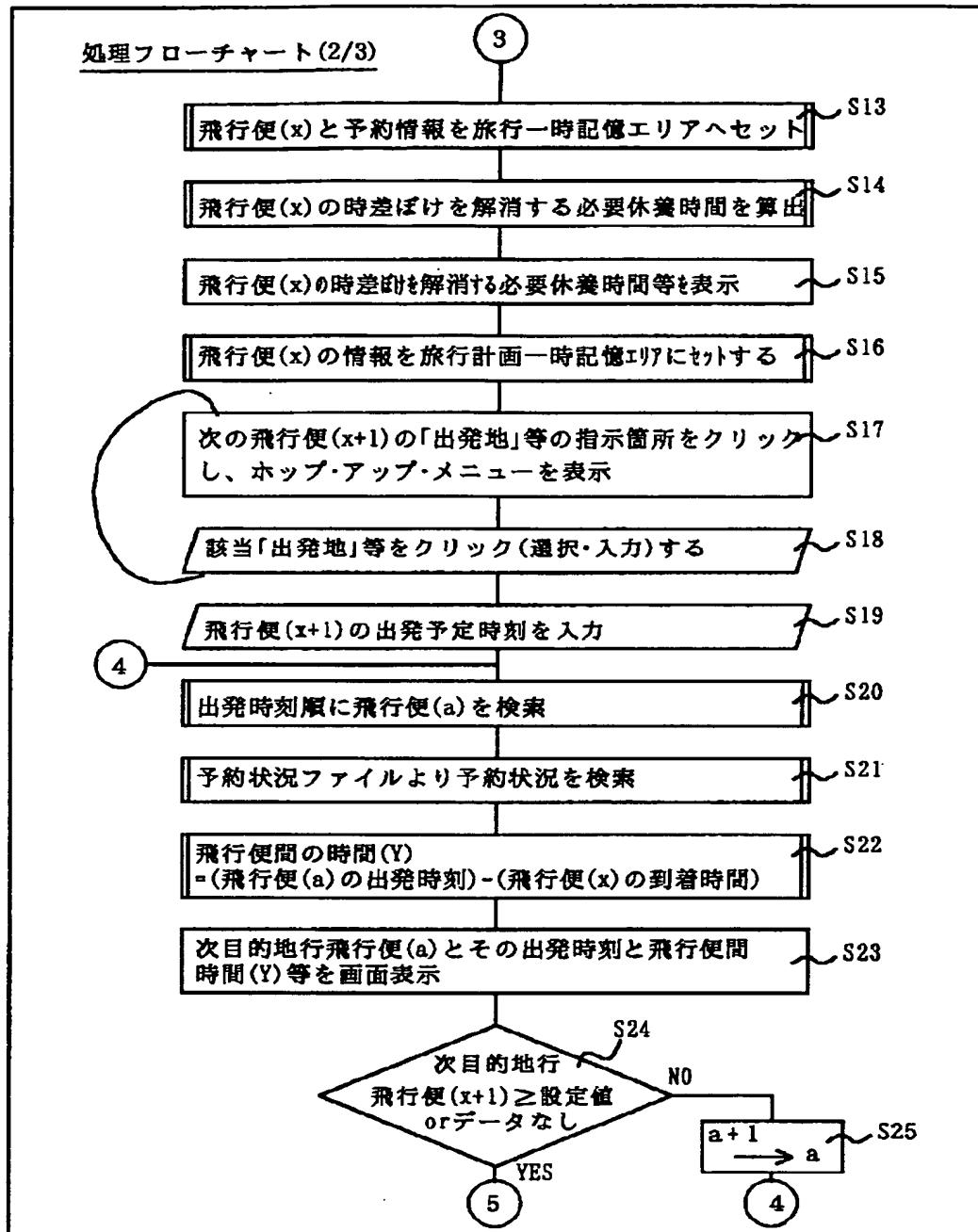


[Drawing 9]
図 9

キー項目 区間(開始時刻～終了時刻)
属性項目 出発時刻保致 着時刻保致

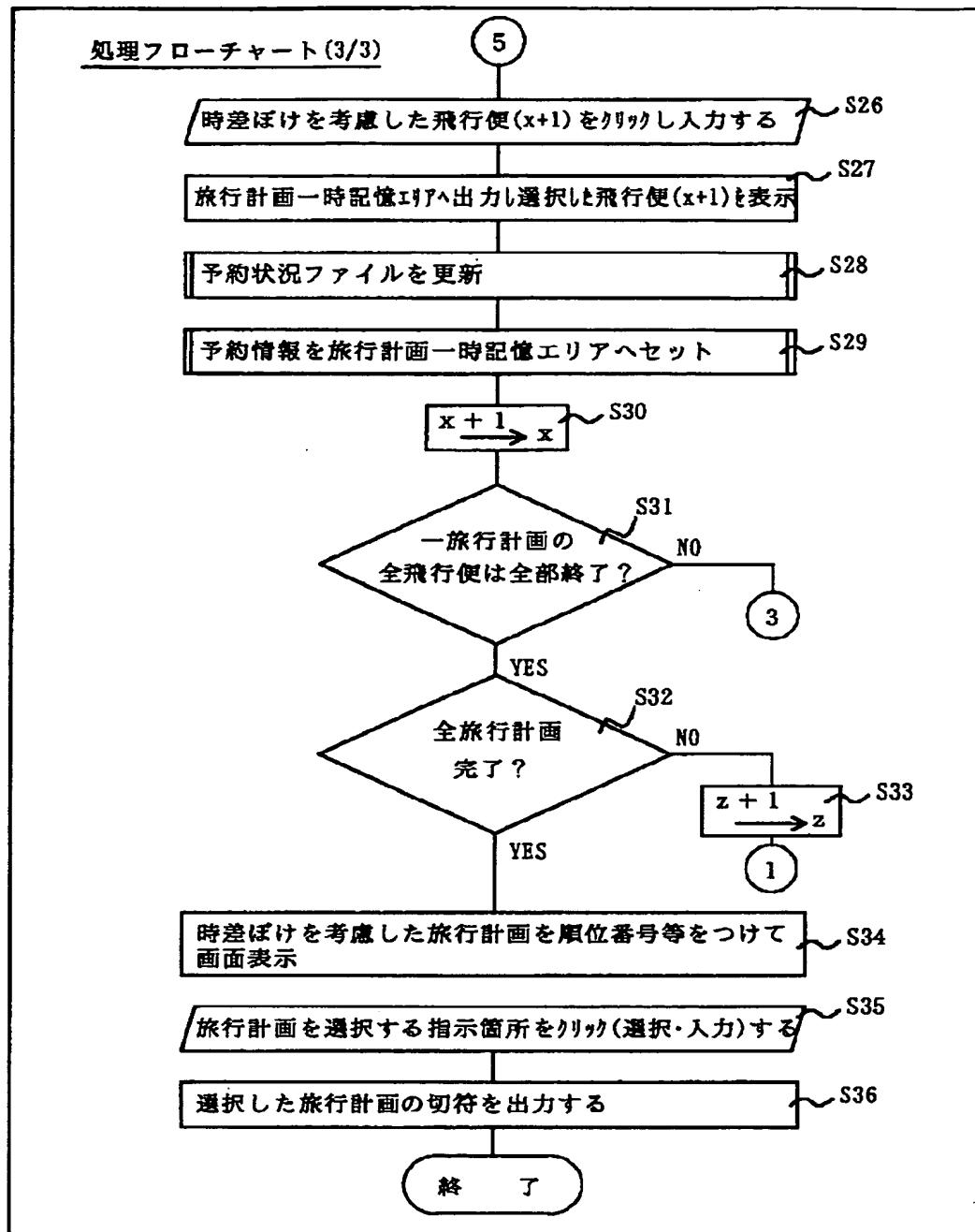
[Drawing 3]

図 3



[Drawing 4]

図 4



[Drawing 5]

旅 行 計 画

'95-7-25(火)

出発地	目的地	出発日	出発予定期刻	飛行便No.	等級	枚数	単価	預行便料(Ev)	必要休憩(Ev)
●名古屋	●パリ	8-10	12:00	ANAS31	●ビ	1	250,000		3 5
●パリ	●サンフランシスコ	8-15	14:00		●フ	1			

飛行便No. 出発地 目的地 単価 預行便料(Ev) 予約状況(空)

BAL-757	パリ	14:00	15:00	30,000	3 ← 150/350 赤表示
CAS-251	15:00	16:00	31,000	4 ← 200/300	
PAN-050	16:00	17:00	30,500	5 ← 300/350 黒表示	

図 9

[Drawing 6]

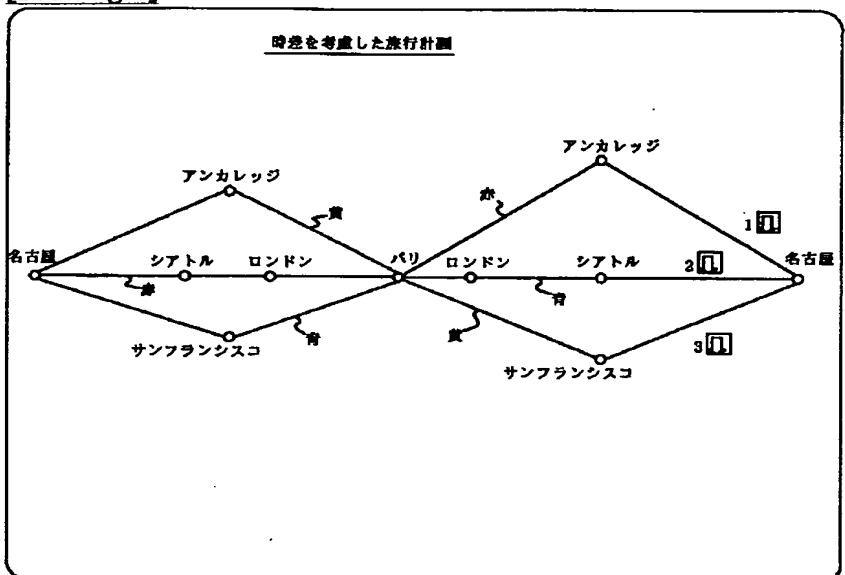


図 10

[Drawing 11]

図 11

キー項目	(c)は複数件あることを表わす
年月日	
飛行便No.	
属性項目	
等級別	
機種/航路別	
座席(n)	
予約状況	
⋮	

[Drawing 7]

図 7

キー項目	(注) (n) : 複数あることを表わす
飛行便No(主キー)	
出発時刻(副キー) (日付含む)	
出発地コード(副キー)	
経由地コード(副キー)(n)	
目的地コード(副キー)	
属性項目	
到着時刻(日付含む)	
等級No(n)	
座席数(n)	
等級料金(n)	
所要時間	
経由地(n)	
目的地	

[Drawing 10]

図 10

キー項目	飛行計画No
属性項目	(n) は複数あることを表わす
飛行便No(n)	
出発地コード(n)	
目的地コード(n)	
出発時刻(n) (日付含む)	
到着時刻(n) (日付含む)	
所要時間(n)	
必要休憩時間(n)	
次飛行便No(n)	
次飛行便出発時刻(n)	
飛行便隔時間(n)	
予約座席(等級、非/喫煙)(n)	
経由地コード 1 (n)	
⋮	
経由地コード n (n)	
飛行便間数	
⋮	

[Drawing 12]

図 12

$$R = \frac{T / 2 + (Z - 4) + Cd + Ca}{10}$$

T = 飛行時間
 Z = タイムゾーンの数 (緯度で15度ごとにひとつのタイムゾーン)
 C d = 出発地の時刻の係数
 C a = 到着地の時刻の係数

(注) 本資料はごま書房出版の「頭のリズム・体のリズム」の151頁から152頁を参照した。

[Translation done.]

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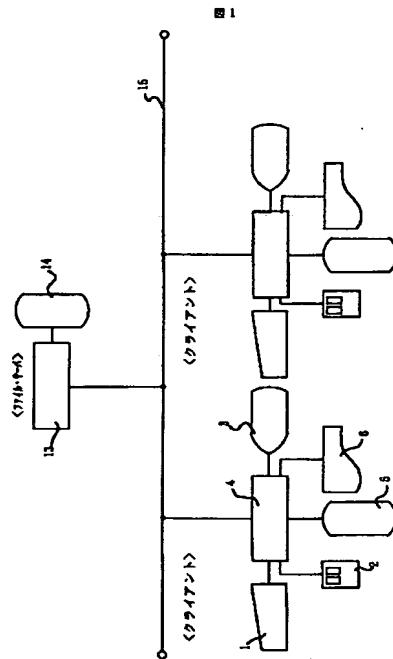
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(54)【発明の名称】 時差ぼけ解消を考慮した旅行計画システム

(57)【要約】 (修正有)

【課題】時間帯域をまたぐ飛行機の旅行計画システムにおいて、時差ぼけ解消を考慮した旅行計画を立てる。

【解決手段】キーボードとマウスより、出発地、目的地、航空会社の飛行便等を旅行一時記憶エリアに登録し、該飛行便について時差ぼけを解消するための必要休養時間を算出し、CRTに表示する。次の目的地行きの出発時刻をキーボードより入力し、該当時間以降の飛行便を複数件CRTに表示する。前記の飛行便の到着時刻と該当時間以降に出発の各飛行便の出発時刻との差を算出し、CRT画面に表示する。表示したCRT画面から、時差ぼけを考慮した飛行便をマウスで選択し、旅行計画一時記憶エリアに登録する。これを各飛行便間で繰り返す。そして、一旅行計画として旅行計画一時記憶エリアに登録する。複数案の旅行計画で、時差ぼけ解消が考慮された順位番号等をCRT画面に表示し、それから選択する。



1

【特許請求の範囲】

【請求項1】時間帯域をまたぐ飛行機の旅行計画システムにおいて、出発地、目的地、出発時刻等を入力し航空会社の飛行便等を選択する手段と、該飛行便について時差ぼけを解消するための必要休養時間の算出・表示手段と、次の目的地行き出発時刻を入力し、複数件の飛行便や前記手段の飛行便の到着時刻と該複数件の飛行便の各出発時刻との差を算出し画面に表示し、時差ぼけを考慮した飛行便を選択する手段と、前記各手段を各飛行便間で繰り返す手段と、を備えることを特徴とする時差ぼけ解消を考慮した飛行機の旅行計画システム。

【請求項2】前項の時間帯域をまたぐ飛行機の旅行計画システムを複数案登録する手段と、前手段で時差ぼけ解消が考慮された順位番号等を画面に表示する手段と、前記手段で選択した旅行計画を出力する手段と、を備えることを特徴とする時差ぼけ解消を考慮した飛行機の旅行計画システム。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、海外への飛行機による旅行計画の斡旋業界において、旅行計画の情報提供に関するものである。

【0002】

【従来の技術】従来のシステムは、各航空会社の飛行機の出発地、行先地、中継地、出発時刻、到着時刻、費用等をもとに旅行計画を立てて、顧客に旅行計画を斡旋していた。

【0003】

【発明が解決しようとする課題】上記従来技術では、時差ぼけを考慮した旅行計画を立てることができず、実際の旅行先で時差ぼけで寝てしまい、すばらしい景色を見逃してしまうという課題があった。本発明の目的はこの課題を解決することにある。

【0004】

【課題を解決するための手段】上記目的を達成するためには、次のようにすれば良い。つまり、時間帯域をまたぐ飛行便を登録し、該前段入力した飛行便の到着時刻を元に時差ぼけ解消に要する時間を国際民間航空機構の国際線の時差ぼけ解消の必要休養時間計算式を利用し算出・表示し、次の目的地行きの複数件の出発時刻、飛行便及び前記飛行便の到着時刻と当該各飛行便の出発時刻との差を算出し画面に表示し、時差ぼけを解消する必要休養時間に満たない出発予定時刻は警告表示することにより時差ぼけ解消を考慮した飛行便を選ぶ。これを各飛行便間で繰り返す。また、各時間帯域をまたぐ飛行機の旅行計画システムで、到着と出発の飛行便間の差の時間を時差ぼけ解消必要時間で割った比率を加算し、飛行便間数で割り、一番比率の高い旅行計画から最後の旅行計画まで順位番号で表示し選択し出力することにより、上記課題を解決できる。

2

【0005】本発明によれば、請求項1の第1の手段は出発地、目的地、航空会社の飛行便等を登録する働きをし、請求項1の第2の手段は各々の飛行便について時差ぼけを解消するために休養時間を国際民間航空機構の国際線の時差ぼけ解消の必要休養時間計算式を利用し算出・表示する働きをし、請求項1の第3の手段は請求項1の第1の手段と同じ項目を次の目的地行きの飛行便について複数件の出発時刻、飛行便及び前記の飛行便の到着時刻と該各飛行便の出発時刻との間の差を算出し画面に表示し、到着時刻と出発時刻の間隔時間が必要時差ぼけ解消時間より少ない場合は、警告表示し、時差ぼけを考慮した飛行便を選択させる働きをし、請求項1の第4の手段はこれを各飛行便間で繰り返す働きをする。

【0006】請求項2の第1の手段は請求項1の各手段を行うことにより複数件の旅行計画を登録する働きをし、請求項2の第2の手段は各旅行計画（経路）毎に時差ぼけが考慮された順位番号等を画面に表示する働きをする。請求項2の第3の手段は前手段から時差ぼけを考慮した旅行計画を選択し出力する働きをする。これにより時差ぼけを考慮した旅行計画ができるので上記従来技術の課題を解決できる。

【0007】

【発明の実施の形態】図1は本実施例の時差ぼけ解消を考慮した旅行計画システムを実現するブロック構成図である。

【0008】本システムのクライアント側の端末として、入力装置としてはキーボード1とマウス2、データを表示する表示装置としてはCRT3、制御装置としては中央処理装置（CPU）4、データを記憶する記憶装置としては磁気ディスク記憶装置5、出力装置としてはプリンタ6、ファイル・サーバ側は制御装置として中央処理装置（CPU）13、記憶装置として磁気ディスク記憶装置14、伝送装置としてローカル・エリア・ネットワーク（LAN）15、とから構成される。尚、クライアント側にファイル・サーバ側のファイルを持つ場合は、ファイル・サーバの中央処理装置13、磁気ディスク記憶装置14と伝送装置ローカル・エリア・ネットワーク（LAN）15は不要である。CRTは液晶表示装置（LCD）であってもよい。

【0009】図2、図3、図4は本発明全体を処理する処理フローチャートである。図5、図6は本発明を適用するときの表示画面例である。図5は飛行便マスター・ファイルを表す。該マスター・ファイルの飛行便NOは主キー部であり、主キーの小から大の順に並んでいる。出発時刻、出発地コード、経由地コード、目的地コードは副キー部で、やはり小から大に並んでおり、各々単独のキーとして検索できる。図8は出発地（経由地、目的地）マスター・ファイルを表す。図9は時刻係数テーブルであり、キー部は開始時刻から終了時刻の区間である。

図10は旅行計画一時記憶エリアを表す。図11は予約

状況ファイルを表す。キー部は年月日と飛行便NOで構成されている。図12は国際民間航空機関の国際線用時差ぼけを解消する基準休養時間(R)計算式を利用した計算ルーチンである。この中で、ファイル・サーバ側には飛行便マスター・ファイル(図7)、出発地マスター・ファイル(図8)、予約状況ファイル(図11)を持つ。該ファイルはファイル・サーバがない場合又はクライアント側だけで処理する場合クライアント側に持つてもよい。

【0010】ここで、「名古屋からシートル・ロンドン経由パリに行き、パリからアンカレッジ経由名古屋に戻ってくる」旅行計画を立てる例を元に図2、図3、図4の処理フローチャートに沿って説明する。まず、顧客から旅行計画案を提出してもらい、それを元に操作者は中央処理装置4の旅行計画システム・アプリケーション・プログラム(TRIP-AP)を立ちあげる。(TRIP-AP)はZカウンタに「1」をセットする(S01)。Xカウンタに「1」をセットし(S02)、旅行計画画面(図5)を表示する(S03)。操作者は出発地の指示箇所をクリックし、ポップ・アップ・メニューを表示し(S04)、該当出発地をクリック(選択・入力)(S05)する。目的地、等級等についても出発地と同様に処理する。そして、操作者は出発日と出発予定期刻を入力する(S06)。該入力を元に(TRIP-AP)は該出発予定期刻以降の飛行便(b)を飛行便マスター・ファイル(図7)より検索し(S07)、予約状況ファイル(図11)より年月日と飛行便NO(b)をキーにして予約状況を検索し(S08)、旅行計画画面(図5)の下段に表示(S09)する。2回目以降は出発予定期刻で飛行便NO(b)より後のものを飛行便マスター(図7)から検索する。日付が変わった場合はラップ・アラウンドして検索する。表示件数が設定値になったか又はデータがない場合は(S11)に行く。そうでない場合はbカウンタ+1をbカウンタに入れて(S07)に行く。操作者は該当飛行便(X)をクリック(選択・入力)する(S11)。(TRIP-AP)はクリックした内容を元に年月日と飛行便NOをキーにして予約状況ファイル(図11)を更新し(S12)、該飛行便マスター情報と該予約情報を旅行計画一時記憶エリア(図10)にセットする(S13)。該当飛行便(X)NOを元に飛行便マスター(図7)を検索し、該マスターの所要時間を抽出し、図12の計算ルーチンのT(飛行時間)にパラメータをセットする。該飛行便(X)の出発地コードを図8の出発地マスター・ファイルのキー項目にセットし、検索し、経度を抽出する。目的地コード(又は経由地コード)についても出発地コードと同様に行う。該出発地経度と該目的地経度を元に、(出発地経度-目的地経度)/15を算出し、図12の計算ルーチンのZ(タイムゾーンの数)パラメータにセットする。選択した該当飛行便(X)の旅行計画一時記憶エリア

(図10)の出発時刻から図9の時系列係数テーブルの該当キー項目を探し、該当キー項目で検索する。該時系列係数テーブルの出発時刻係数を図12の計算ルーチンのCdパラメータ(出発地の時刻の係数)にセットする。同様に該飛行便(X)の旅行計画一時記憶エリア(図10)の該到着時刻を元に図9の時系列係数テーブルの該当キー項目を探し、該当キー項目で検索する。そして、到着時刻係数を抽出し、図12の計算ルーチンのCaパラメータ(到着値の時刻の係数)にセットする。それを元に図12の計算ルーチンを行い、時差ボケを解消する必要休養時間(R)を算出し(S14)表示する(S15)。必要休養時間(R)の情報を(図10)の旅行計画一時記憶エリアへセットする(S16)。操作者(オペレータ)は次の飛行便(X+1)の出発地の指示箇所をクリックし、ポップ・アップ・メニューを表示し(S17)、該当出発地をクリックし、入力する(S18)。目的地、等級等についても出発地と同様に処理する。飛行便(X+1)の年月日と出発予定期刻を入力する(S19)。該出発予定期刻を元に該出発予定期刻以降の飛行便NO(a)を飛行便マスター(図7)から検索し(S20)、予約状況ファイルを年月日と該飛行便NO(a)をキーにして検索し予約状況を抽出(S21)する。2回目以降は該出発予定期刻で飛行便NO(a)より後のものを飛行便マスター(図7)から検索する。日付が変わった場合はラップ・アラウンドして検索する。該飛行便NO(a)の出発時間(日付も含む)から飛行便(X)の到着時間(日付も含む)を控除し、飛行便間時間(Y)を算出する(S22)。次目的地行き飛行便(a)とその出発時刻と飛行便間時間(Y)等を画面に表示する(S23)。次目的地行飛行便が設定値と同じだけ表示されたかまたはデータがないか判定する(S24)。そうでない時(NO)はaカウンタ+1をaカウンタにセットし(S20)に戻る(S25)。そう(YES)ならば操作者は時差ぼけを考慮した飛行便(X+1)をクリック(選択・入力)する(S26)。(TRIP-AP)は入力した情報を旅行計画一時記憶エリア(図10)へ出力し、選択した飛行便(X+1)の出発予定期刻、飛行便NO、単価等を旅行計画画面(図5)の上段の該出発予定期刻の入力行に表示する(S27)。と同時に年月日と飛行便NO(X+1)をキーにして予約状況ファイル(図11)を更新し(S28)、予約情報を旅行計画一時記憶エリアにセットする(S29)。そして、Xカウンタ+1をXカウンタにセットする(S30)。一旅行計画の全飛行便は終了したか旅行計画画面(図5)に表示する(S31)。終了していない場合は操作者の「次飛行便」のクリックで(S13)に戻る。終了している場合は、操作者の「一旅行計画完」クリックで全旅行計画が完了したか操作者の応答を求める(S32)。但し、操作者が「一旅行計画完」ではなく「旅行計画終了」をクリックしたら(S34)

へ行く。完了の応答でない場合、(TRIP-AP)はZカウンタ+1をZカウンタに与え(S33)、(S02)に戻る。

【0011】操作者から「全旅行計画完了」のクリックがあった場合、今まで登録した全旅行計画について、旅行計画一時記憶エリア(図10)より抽出し、到着時刻と出発時刻の飛行便間の差の時間を時差ぼけを解消する必要休養時間で割った比率を加算し、合計を飛行便間数で割り、一番比率の高い旅行計画から順位番号等をつけて画面表示する(図6)。また、図6の各旅行計画は「名古屋からシアトル・ロンドン経由パリに行き、パリからアンカレッジ経由名古屋に戻ってくる」を丸印と線によってつなぎ、出発地、経由地、目的地の各コードを元に出発地マスタ・ファイルを参照しその地名を表示する。各旅行計画は色によって識別する(S34)。操作者は旅行計画の順位番号についている指示個所をクリック(選択・入力)する(S35)。(TRIP-AP)は選択した旅行計画の切符をプリント3に出力する(S36)。(S04)、(S05)、(S17)、(S18)は項目内容対応に選択コード情報を表示し、該当するコードを入力し、選択する方式でもよい。旅行計画を立案するのみで実際に切符を作る必要がない場合は(S08)、(S12)、(S21)、(S28)、(S36)は不要である。

【0012】

【発明の効果】本発明によれば、時差ぼけ解消を考慮した旅行計画を立てられるので、実際の旅行先で、時差ぼけで寝てしまい、すばらしい景色を見逃すこととはなくなる効果がある。

【図面の簡単な説明】

【図1】本実施例の時差ぼけ解消を考慮した旅行計画システムを実現するブロック構成図である。

【図2】本発明全体を処理する処理フローチャートであ*

*る。

【図3】図2の続きのフローチャートである。

【図4】図3の続きのフローチャートである。

【図5】本発明を適用したときの旅行計画画面例である。

【図6】本発明を適用したときの時差を考慮した旅行計画画面例である。

10 【図7】飛行便マスター・ファイルを表す。該マスター・ファイルの飛行便NOは主キー部であり、主キーの小から大の順に並んでいる。出発時刻(日付を含む)、出発地コード、経由地コード、目的地コードは副キー部で、やはり小から大に並んでおり、各々単独のキーとして検索できる。

【図8】出発地(経由地、目的地)マスター・ファイルを表す。

【図9】時刻係数テーブルであり、キー部は開始時刻から終了時刻の区間である。

【図10】旅行計画一時記憶エリアを表す。

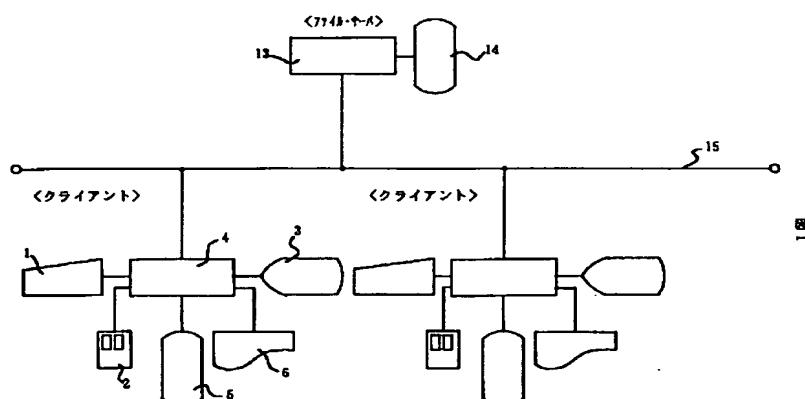
20 【図11】予約状況ファイルを表す。キー部は年月日と飛行便NOで構成されている。

【図12】国際民間航空機構の国際線用時差ぼけを解消する基準休養時間(R)計算式を利用した計算ルーチンである。

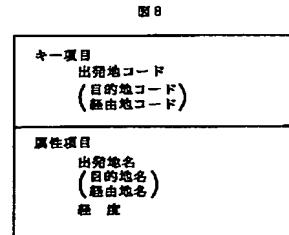
【符号の説明】

1…クライアント側のキーボード、2…クライアント側のマウス、3…クライアント側のCRT3(又は液晶表示装置LCD)、4…クライアント側の中央処理装置(CPU)、5…クライアント側の磁気ディスク記憶装置、6…クライアント側のプリンタ、13…ファイル・サーバ側の中央処理装置(CPU)、14…ファイル・サーバ側の磁気ディスク記憶装置、15…ローカル・エリア・ネットワーク(LAN)。

【図1】

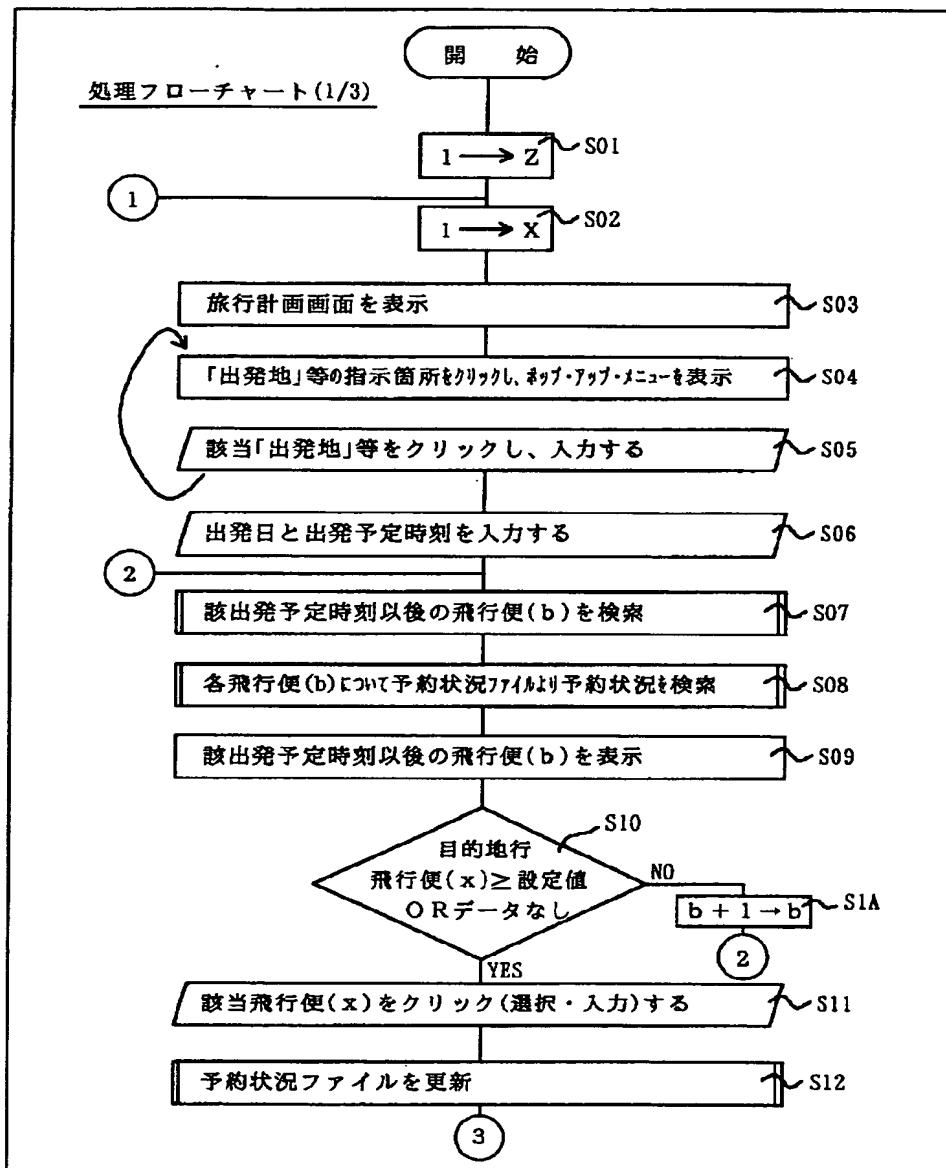


【図8】



【図2】

図2



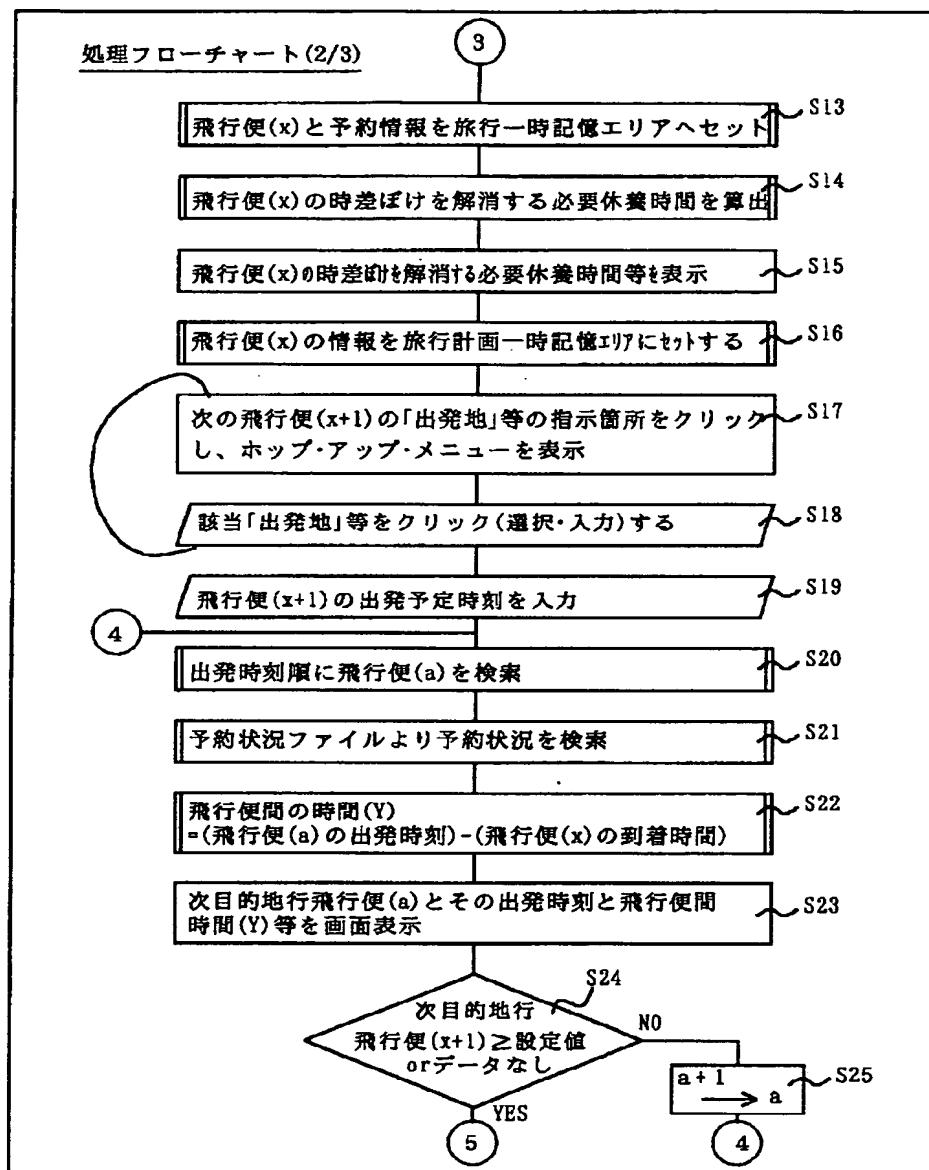
【図9】

図9

第一項目 区間(開始時刻～終了時刻)
属性項目 出発時刻係数 到着時刻係数

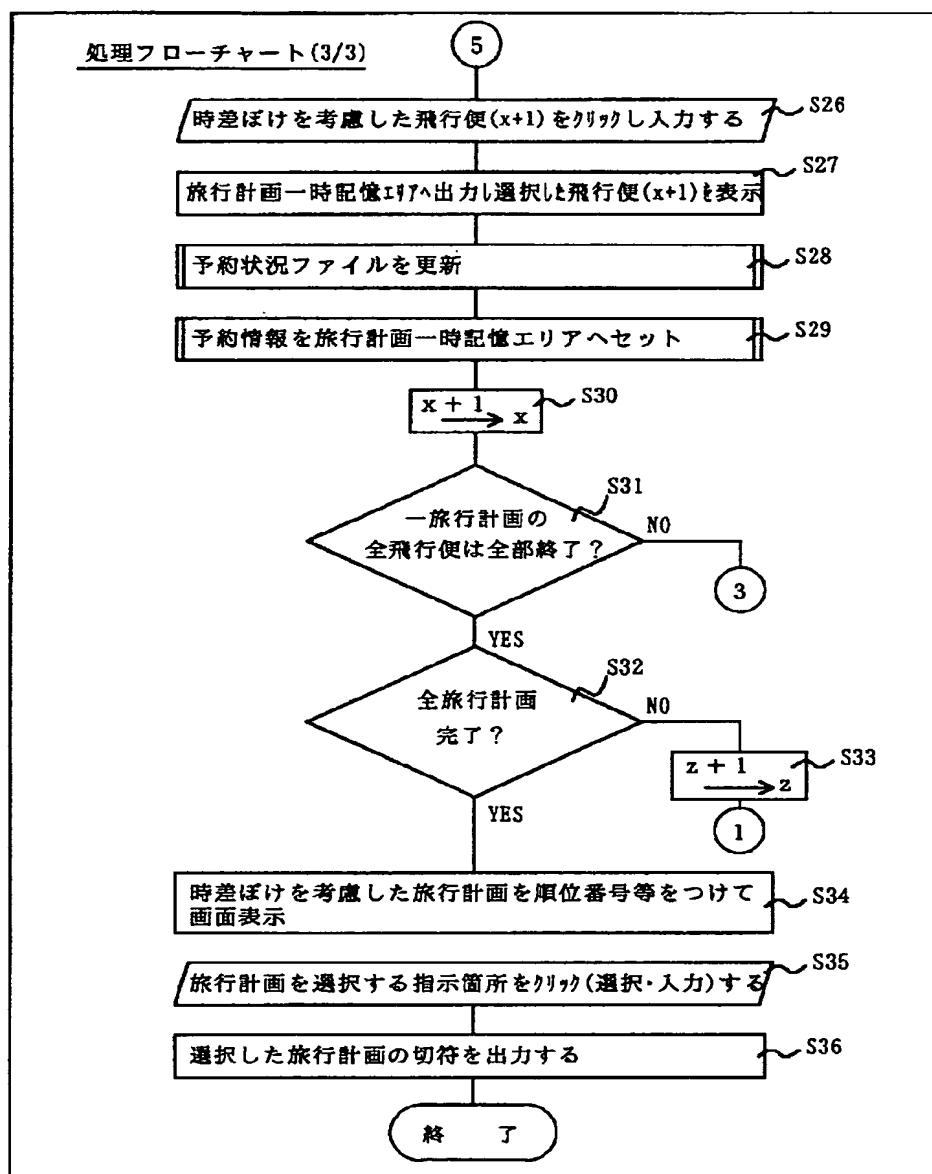
【図3】

図3



【図4】

図4



【図5】

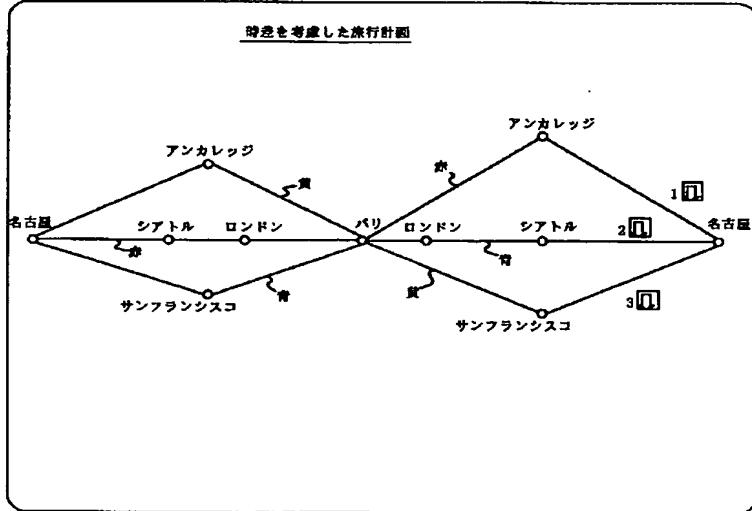
旅 行 計 画

'95-7-25(火)

出発地	目的地	出発日	出発予定時刻	飛行便No.	等級	枚	単価	飛行便回数(Bv)	必要休養(Bv)
○名古屋	○パリ	8-10	12:00	ANAS21	○ビ	1	250,000		
○パリ	○コンシ	8-16	14:00		○フ	1		3	6

飛行便No.	出発地	目的地	単価	飛行便回数(Bv)	予約状況(空)
DL-757	パリ	14:00	15:00	30,000	3 ← 150/350 席表示
CAS-251	15:00	16:00	31,000	4 ← 200/300	
PAN-050	16:00	17:00	30,500	5 ← 300/350 席表示	

【図6】



【図11】

図11

キー項目	(b)は複数件あることを表わす
年月日	
飛行便No.	
属性項目	
等級別	
禁煙/喫煙用	
座席(△)	
予約状況	
...	

【図7】

図7

キー項目	(注) (n) : 値数あることを表わす
飛行便No(主キー)	
出発時刻(副キー)(日付含む)	
出発地コード(副キー)	
経由地コード(副キー)(n)	
目的地コード(副キー)	
属性項目	
到着時刻(日付含む)	
等級No(n)	
座席数(n)	
等級基準(n)	
所要時間 (経由地(n)) (目的地)	
⋮	

【図10】

図10

キー項目	旅行計画No
(注) (n) : 値数あることを表わす	
属性項目	
飛行便No(n)	
出発地コード(n)	
目的地コード(n)	
出発時刻(n)(日付含む)	
到着時刻(n)(日付含む)	
所要時間(n)	
必賃休憩時間(n)	
次飛行便No(n)	
改飛行便出発時刻(n)	
飛行機回数(n)	
子供座席(等級、赤/青列)(n)	
経由地コード 1 (n)	
⋮	
経由地コード n (n)	
飛行便回数	
⋮	

【図12】

図12

$$R = \frac{T / 2 + (Z - 4) + Cd + Ca}{10}$$

T = 飛行時間

Z = タイムゾーンの数 (緯度で15度ごとにひとつのタイムゾーン)

Cd = 出発地の時刻の値数

Ca = 到着地の時刻の値数

(注) 本資料はごま書房出版の「運のリズム・体のリズム」の151頁から152頁を参照した。